

REMARKS

Claims 1, 3, 5, and 7 have been amended. Claims 1 – 9 are presented for reconsideration and further examination in view of the foregoing amendments and the following remarks.

In the outstanding Final Office Action, the Examiner again rejected claims 1 - 8 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,825,892 to Braudaway et al. and further in view of U.S. Patent No. 6,137,892 to Powell et al.; and rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Braudaway et al. and Powell et al. as applied to claim 1 and further in view of U.S. Patent No. 6,580,804 to Abe. In the outstanding Advisory Action, the Examiner indicated that the arguments upon which Applicants rely are not recited in the claims.

By this Response and Amendment, claims 1, 3, 5, and 7 have been amended; and the prior art rejection is traversed.

Independent claims 1 and 3 have been amended to recite “...a large and small relation between the first counter value and the second counter value obtained by the comparison with the average becomes a present large and small relation...;” and independent claims 5 and 7 have been amended to recite “...a large and small relation between the first counter value and the second counter value obtained by the comparison with the average...” Support for the amendments can be found for example in the specification at page 10, line 7 to page 12, line 2.

Therefore, it is respectfully submitted that the above amendments do not introduce any new matter to this application within the meaning of 35 U.S.C. §132.

Rejections Under 35 U.S.C. §103(a)

The Examiner rejected claims 1 – 8 as being unpatentable over Braudaway et al. in view of

Powell et al.; and rejected claim 9 as being unpatentable over Braudaway et al. in view of Powell et al. as applied to claim 1 and further in view of Abe.

Response

Reconsideration and withdrawal of the rejections are respectfully requested.

To establish a *prima facie* case of obviousness, the Examiner must establish: (1) that some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. Amgen, Inc. v. Chugai Pharm. Co., 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

It is respectfully submitted that the combination of references fails to teach or suggest all the claim limitations.

The “average” according to the present invention is “an average of intensity values or color difference values of all pixels in the specified line in the received image signals,” as clearly recited in amended independent claim 1.

Specifically, as recited in claim 1 of the present invention, an average of intensity values or color difference values of all pixels in the specified line (e.g. even line in the embodiment) in the received image signals is compared with an intensity value or a color difference value of each pixel in a line (e.g. odd line in the embodiment) adjacent to the specified line to find, for all pixels in the adjacent line, a first counter value and a second counter value, the first counter value indicating a number of pixels each of which has an intensity value or a color difference value larger than the average, the second counter value indicating a number of pixels each of which has an intensity value or a color difference value smaller than the average. Then, the intensity value or the color difference

value of each pixel in the adjacent line is transformed such that a large and small relation between the first counter value and the second counter value obtained by the comparison with the average becomes a preset large and small relation according to a first value (e.g. “1” in the embodiment) or a second value (e.g. “0” in the embodiment) of the encryption data from an encryption data generating means. Then, the received image signals are outputted as watermarked image signals. *See* amended claim 1.

In other words, a digital watermark is embedded by shifting the intensity value or the color difference value of each pixel in the adjacent line (e.g. odd line in the embodiment) based on the average of the intensity values or the color difference values of all pixels in the specified line (e.g. even line in the embodiment). In short, the intensity value or the color difference value of each pixel in the adjacent line as a watermark data is varied depending upon the average of the intensity values or the color difference values of all pixels in the specified line. *See* for example page 12, lines 3 - 14.

A method corresponding to the above apparatus, which is amended similar to claim 1, is recited in claim 3.

A digital watermark reproducing apparatus or method for reversely reproducing a digital watermark which is embedded in image data by the apparatus recited in claim 1 or according to the method recited in claim 3, conforms to claims 1 or 3, and is recited in claims 5 or 7, respectively.

The Examiner asserted that Braudaway et al. discloses selecting a rectangular cluster of pixels and works on pixels and adjacent pixels in columns 9, 10, and 16. However, the Examiner stated that Braudaway et al. does not specify that the area has to be of a predetermined or larger than a base value (i.e., more than one pixel in width). *See* Office Action at page 2. The Examiner maintained that even though Powell et al. is not expressly directed to a “line,” it would have been

obvious to one of ordinary skill in the art to apply the teachings of Powell et al. to Braudaway et al.

In contrast with the present invention, Powell et al. introduces a method using “a difference between averages” as a calculation example. Specifically, as shown in Figure 3, the method regards a block having 5 X 5 pixels as a unit, calculates a difference between an average of pixel values within a 3 X 3 pixel small neighborhood and an average of pixel values with a 5 X 5 pixel large neighborhood, and selects a block whose difference is large as a block into which a digital watermark data is to be embedded. *See* column 4, lines 10 - 51. Then, the method transforms intensity values of pixels in the selected block according to bits constituting the digital watermark information and accordingly realizes the embedding of the information. *See* column 5, line 66 to column 5, line 64.

Accordingly, Powell et al. fails to teach or suggest shifting an intensity value indicating a digital watermark data based on an average of intensity values as provided in the present invention. Instead, in Powell et al., a block into which a digital watermark data is to be embedded is changed depending upon an average of intensity values, but an intensity value as a digital watermark data is not changed depending upon an average of intensity values, which is unlike the present invention.

Therefore, Powell et al. fails to cure the deficiencies of Braudaway et al. regarding independent claims 1, 3, 5, and 7, as amended.

Abe teaches pixel-based digital watermarks located near edges of an image. The Examiner cites Abe in an attempt to cure the deficiencies of Braudaway et al. and Powell et al. regarding claim 9.

Even *assuming arguendo* that Abe teaches placing a digital watermark near or substantially along edges of an image, Abe fails to cure the deficiencies of the other two references. Namely, Abe fails to teach or suggest that the intensity value or the color difference value of each pixel in the

adjacent line as a watermark data is varied depending upon the average of the intensity values or the color difference values of all pixels in the specified line.

In view of the above, Applicants respectfully submit that claims 1 - 9 define over Braudaway et al., Powell et al., and Abe taken either alone or in combination. Further, as the combination of references fail to teach or suggest all the limitations of claims 1 - 9 of the present invention, it is therefore respectively submitted that the rejections of claims 1 - 9 under 35 U.S.C. § 103(a) should be withdrawn.

CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned attorney if it is believed that such contact will expedite the prosecution of the application.

In the event this paper is not timely filed, Applicants petition for an appropriate extension of time. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 14-0112.

Respectfully submitted,
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